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NEWS 8 DEC 23 New IPC8 SEARCH, DISPLAY, and SELECT fields in
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NEWS 9 JAN 13 IPC 8 searching in IFIPAT, IFIUDb, and IFICDB
NEWS 10 JAN 13 New IPC 8 SEARCH, DISPLAY, and SELECT enhancements
added to
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NEWS 11 JAN 17 Pre-1988 INPI data added to MARPAT
NEWS 12 JAN 17 IPC 8 in the WPI family of databases including WPIFV
NEWS 13 JAN 30 Saved answer limit increased
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added to TULSA

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ENTER A FILE NAME OR (IGNORE):ignore

| COST IN U.S. DOLLARS | ENTRY | SINCE FILE SESSION | TOTAL |
|----------------------|-------|--------------------|-------|
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=> (magnetization or magnetism or magnetic) and (hysteresis loop) and (bind or bound)

L1 0 FILE AGRICOLA

L2 0 FILE BIOTECHNO

L3 0 FILE CONFSCI
L4 0 FILE HEALSAFE
L5 0 FILE IMSDRUGCONF
L6 0 FILE LIFESCI
L7 1 FILE PASCAL

TOTAL FOR ALL FILES

L8 1 (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND
(HYSTERESIS LOOP)
AND (BIND OR BOUND)

=> d l7 ibib abs total

L7 ANSWER 1 OF 1 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS
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STN

ACCESSION NUMBER: 1998-0065915 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRGT. 1998 INIST-CNRS. All rights
reserved.

TITLE (IN ENGLISH): Theoretical hysteresis loops for
single-domain particles with cubic anisotropy

AUTHOR: USOV N. A.; PESCHANY S. E.

CORPORATE SOURCE: Troitsk Institute for Innovation and Fusion Research,
TRINITI, 142092, Troitsk, Moscow Region, Russian
Federation

SOURCE: Journal of magnetism and magnetic materials, (1997),
174(3), 247-260, 21 refs.

ISSN: 0304-8853 CODEN: JMMMDC

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

AVAILABILITY: INIST-17230, 354000069632850030

AN 1998-0065915 PASCAL

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AB The magnetic properties of randomly oriented assembly of
noninteracting single-domain particles with cubic anisotropy are studied
in detail. Both signs of the cubic anisotropy constant are considered. We
analyze the irreversible jumps of particle magnetization by
means of direct solution of the Landau-Lifshitz-Gilbert (LLG) equation in
case when several equilibrium positions are available for a disappearing
magnetization state. It is shown that a particular
hysteresis loop of a particle with cubic anisotropy may
depend on the value of the damping parameter in the LLG equation. On the
other hand, the upper and lower bounds for the coercive force
of an assembly stated in the paper turn out to be very close to each

other. The physical reason for the closeness of the upper and lower bounds is the fact that, for particles with cubic type of magnetic anisotropy, the fraction of the uniquely determined particular hysteresis loops is rather large. As a result, the coercive force of randomly oriented assembly with cubic anisotropy is almost independent of the value of the damping parameter. It is also shown that it has only weak dependence on the value of the second cubic anisotropy constant.

=> (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND (HYSTERESIS LOOP) and (DNA or RNA or protein or antibody or antigen or peptide)

L9 0 FILE AGRICOLA
L10 0 FILE BIOTECHNO
L11 0 FILE CONFSCI
L12 0 FILE HEALSAFE
L13 0 FILE IMSDRUGCONF
L14 0 FILE LIFESCI
L15 4 FILE PASCAL

TOTAL FOR ALL FILES

L16 4 (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND
(HYSTERESIS LOOP)
AND (DNA OR RNA OR PROTEIN OR ANTIBODY OR ANTIGEN OR
PEPTIDE)

=> dup rem

ENTER L# LIST OR (END):116

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PROCESSING COMPLETED FOR L16

L17 4 DUP REM L16 (0 DUPLICATES REMOVED)

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STN

ACCESSION NUMBER: 2005-0262175 PASCAL

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TITLE (IN ENGLISH): Magnetic Langmuir-Blodgett films of ferritin
with different iron loadings

AUTHOR: SORIANO-PORTILLO Alejandra; CLEMENTE-LEON Miguel;
GOMEZ-GARCIA Carlos J.; CORONADO Eugenio; GALVEZ
Natividad; COLACIO Enrique; DOMINGUEZ-VERA Jose M.

CORPORATE SOURCE: Instituto de Ciencia Molecular, Universidad de Valencia, Dr. Moliner 50, 46100 Burjassot, Spain;
Dpto. Quimica Inorganica, Facultad de Ciencias,
Universidad de Granada, 18071 Granada, Spain

SOURCE: Synthetic metals, (2005), 148(1), 7-10, 18 refs.
Conference: 9 European Conference on Organized Films,
Valladolid (Spain)
ISSN: 0379-6779 CODEN: SYMEDZ

DOCUMENT TYPE: Journal; Conference

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Switzerland

LANGUAGE: English

AVAILABILITY: INIST-18315, 354000127029330020

AN 2005-0262175 PASCAL

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AB Magnetic Langmuir-Blodgett multilayers of two ferritin molecules 1 and 2, containing, respectively, 4220 and 3062 Fe atoms have been prepared by using the adsorption properties of a 6/1 mixed monolayer of dioctadecyldimethylammonium bromide (DODABr) and methyl stearate (SME). Transfer ratios close to unity were reached giving rise to LB films with a strong red colour. Infrared and UV-vis spectroscopy indicates that ferritin molecules are incorporated within the LB films. Magnetic measurements show that the superparamagnetic properties of these molecules are preserved. Thus, a marked hysteresis loop of magnetisation is obtained for LB films of 1 and 2 with a coercive field of 3400 and 2400 G, respectively.

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STN

ACCESSION NUMBER: 2004-0320129 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRG. 2004 INIST-CNRS. All rights reserved.

TITLE (IN ENGLISH): Preparation and application of surface-coated superparamagnetic nanobeads in the isolation of genomic DNA

AUTHOR: XIN XIE; XU ZHANG; HUAN ZHANG; DEPU CHEN; WEIYANG FEI

CORPORATE SOURCE: State Key Laboratory of Extraction Separation Engineering, Department of Chemical Engineering, Tsinghua University, Beijing 100084, China; Faculty of Science, Sichuan Agricultural University, Sichuan 625014, China; Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139, United States; Department of Chemistry, Tsinghua University, Beijing 100084, China

SOURCE: Journal of magnetism and magnetic materials, (2004),
277(1-2), 16-23, 27 refs.

ISSN: 0304-8853 CODEN: JMMMD

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

AVAILABILITY: INIST-17230, 354000110313340020

AN 2004-0320129 PASCAL

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AB A novel method was developed to prepare functionalized magnetic beads, in which superparamagnetic Fe₃O₄ core was synthesized with an injection-precipitation method and then was coated with functional groups using one-step suspension polymerization. In the coating and functionalizing process, a unique coupling reagent, bis-(2-hydroxyethyl methacrylate) phosphate, was introduced so that the monomers polymerized only on the surface of the nanocrystals without forming separate nuclei. The thickness of the coating layer and the size and density of the coated nanobeads were controlled by changing the quantity of the coated monomers. The nanobeads were characterized by transmission electron microscopy, light scattering spectrometry, Fourier transformation infrared spectroscopy. X-ray fluorescence spectroscopy and the magnetic hysteresis loop determination method. The carboxyl-modified magnetic nanobeads were employed to simplify the isolation of genomic DNA from human whole blood.

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STN

ACCESSION NUMBER: 2003-0231776 PASCAL

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TITLE (IN ENGLISH): Hexagonal lattice of 10-nm magnetic dots

AUTHOR: MALKINSKI L.; CAMLEY R. E.; CELINSKI Z.;

WINNINGHAM T.

A.; WHIPPLE S. G.; DOUGLAS K.

CORPORATE SOURCE: University of New Orleans, AMRI, New Orleans, Louisiana 70148; Department of Physics, University of Colorado at Colorado Springs, Colorado 80919; Department of Physics, University of Central Florida, Orlando, Florida 32816; Department of Physics, University of Colorado, Boulder, Colorado 80309

SOURCE: Journal of applied physics, (2003-05-15), 93(10),
7325-7327

ISSN: 0021-8979 CODEN: JAPIAU

DOCUMENT TYPE: Journal; Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-126
AN 2003-0231776 PASCAL
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AB We have grown precisely ordered and precisely located arrays of ultra-small magnetic dots. The nanofabrication process is based on the use of a protein crystal etch mask which is used to create a hexagonal lattice of holes in Si substrates. An assembly of (Fe/Pd).sub.4 dots with the average dot size of 10 nm in diameter, 6.5 nm height, and an average separation between dot centers of 22 nm was grown using molecular-beam epitaxy. The dot locations are determined by the biological mask that is used to create ordered arrays of .eqvsim.4 nm deep holes in Si. Fe/Pd multilayers (1 nm thick Fe and 0.4 nm thick Pd layers) were deposited to create dots within these holes. The dots extend .eqvsim.2.5 nm above the surface, with a thicker (1.5 nm) final layer of Pd for protection of these structures during measurements. Magneto-optical Kerr effect and magnetometry data showed that these objects are magnetic even at room temperature and are fairly soft with a coercive field of .eqvsim.40 Oe. Measurements of the hysteresis loop revealed that magnetization is in plane and that $4\pi M_{\text{eff}}$ is on the order of 15 kG. .COPYRGT. 2003 American Institute of Physics.

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STN

ACCESSION NUMBER: 2002-0054307 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2002 American Institute of Physics. All rights reserved.
TITLE (IN ENGLISH): Apparent magnetic energy-barrier distribution in horse-spleen ferritin: Evidence for multiple interacting magnetic entities per ferrihydrite nanoparticle
AUTHOR: ST PIERRE T. G.; GORHAM N. T.; ALLEN P. D.; COSTA KRAMER J. L.; RAO K. V.
CORPORATE SOURCE: Department of Physics, The University of Western Australia, Crawley, WA 6009, Australia; Department of Condensed Matter Physics, Royal Institute of Technology, S-100 44, Stockholm, Sweden
SOURCE: Physical review. B, Condensed matter and materials physics, (2002-01-01), 65(2), 024436-024436-7
ISSN: 1098-0121 CODEN: PRBMDO

DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-144 B

AN 2002-0054307 PASCAL

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AB Magnetic viscosity measurements were made on native horse-spleen ferritin in zero applied magnetic field at temperatures between 2 and 21 K. The data have been used to calculate the apparent magnetic-moment-weighted energy barrier distribution for the sample of ferritin. The distribution is composed of a log-normal distribution plus a second distribution that is well described by an exponential decay of barrier frequency with increasing barrier height. The two distributions contribute approximately equally to the overall distribution. The log-normal distribution has its peak at an energy barrier of approximately 3×10^{-21} J, while the decay constant for the second distribution has a value of approximately 2×10^{-21} J. The existence of the low-energy barrier distribution with exponentially decaying shape in conjunction with the observation of shifted field-cooled magnetic hysteresis loops is interpreted as strong evidence for the existence of multiple interacting magnetic entities within each ferritin particle.

***** Welcome to

DOCUMENT TYPE: Journal; Conference

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United States

LANGUAGE: English

AVAILABILITY: INIST-126

AN 2003-0231776 PASCAL

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AB We have grown precisely ordered and precisely located arrays of ultra-small magnetic dots. The nanofabrication process is based on the use of a protein crystal etch mask which is used to create a hexagonal lattice of holes in Si substrates. An assembly of (Fe/Pd).sub.4 dots with the average dot size of 10 nm in diameter, 6.5 nm height, and an average separation between dot centers of 22 nm was grown using molecular-beam epitaxy. The dot locations are determined by the biological mask that is used to create ordered arrays of .eqvsim.4 nm deep holes in Si. Fe/Pd multilayers (1 nm thick Fe and 0.4 nm thick Pd layers) were deposited to create dots within these holes. The dots extend .eqvsim.2.5 nm above the surface, with a thicker (1.5 nm) final layer of Pd for protection of these structures during measurements. Magneto-optical Kerr effect and magnetometry data showed that these objects are magnetic even at room temperature and are fairly soft with a coercive field of .eqvsim.40 Oe. Measurements of the hysteresis loop revealed that magnetization is in plane and that 4.pi.M.sub.e.sub.f.sub.f is on the order of 15 kG. .COPYRGT. 2003 American Institute of Physics.

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CORPORATE SOURCE: Department of Physics, The University of Western Australia, Crawley, WA 6009, Australia; Department of Condensed Matter Physics, Royal Institute of Technology, S-100 44, Stockholm, Sweden

SOURCE: Physical review. B, Condensed matter and materials physics, (2002-01-01), 65(2), 024436-024436-7

ISSN: 1098-0121 CODEN: PRBMDO

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United States

LANGUAGE: English

AVAILABILITY: INIST-144 B

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| FULL ESTIMATED COST | | 0.21 | 0.21 |

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=> (magnetization or magnetism or magnetic) and (hysteresis loop) and (bind or bound)

L1 0 FILE AGRICOLA

L2 0 FILE BIOTECHNO

L3 0 FILE CONFSCI
L4 0 FILE HEALSAFE
L5 0 FILE IMSDRUGCONF
L6 0 FILE LIFESCI
L7 1 FILE PASCAL

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AND (BIND OR BOUND)

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ACCESSION NUMBER: 1998-0065915 PASCAL

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TITLE (IN ENGLISH): Theoretical hysteresis loops for
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AUTHOR: USOV N. A.; PESCHANY S. E.

CORPORATE SOURCE: Troitsk Institute for Innovation and Fusion Research,
TRINITI, 142092, Troitsk, Moscow Region, Russian
Federation

SOURCE: Journal of magnetism and magnetic materials, (1997),
174(3), 247-260, 21 refs.
ISSN: 0304-8853 CODEN: JMMMD C

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

AVAILABILITY: INIST-17230, 354000069632850030

AN 1998-0065915 PASCAL

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AB The magnetic properties of randomly oriented assembly of
noninteracting single-domain particles with cubic anisotropy are studied
in detail. Both signs of the cubic anisotropy constant are considered. We
analyze the irreversible jumps of particle magnetization by
means of direct solution of the Landau-Lifshitz-Gilbert (LLG) equation in
case when several equilibrium positions are available for a disappearing
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depend on the value of the damping parameter in the LLG equation. On the
other hand, the upper and lower bounds for the coercive force
of an assembly stated in the paper turn out to be very close to each

other. The physical reason for the closeness of the upper and lower bounds is the fact that, for particles with cubic type of magnetic anisotropy, the fraction of the uniquely determined particular hysteresis loops is rather large. As a result, the coercive force of randomly oriented assembly with cubic anisotropy is almost independent of the value of the damping parameter. It is also shown that it has only weak dependence on the value of the second cubic anisotropy constant.

=> (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND (HYSTERESIS LOOP) and (DNA or RNA or protein or antibody or antigen or peptide)

L9 0 FILE AGRICOLA
L10 0 FILE BIOTECHNO
L11 0 FILE CONFSCI
L12 0 FILE HEALSAFE
L13 0 FILE IMSDRUGCONF
L14 0 FILE LIFESCI
L15 4 FILE PASCAL

TOTAL FOR ALL FILES

L16 4 (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND
(HYSTERESIS LOOP)
AND (DNA OR RNA OR PROTEIN OR ANTIBODY OR ANTIGEN OR
PEPTIDE)

=> dup rem

ENTER L# LIST OR (END):116

DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.

ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L16

L17 4 DUP REM L16 (0 DUPLICATES REMOVED)

=> d 117 ibib abs total

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STN

ACCESSION NUMBER: 2005-0262175 PASCAL

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reserved.

TITLE (IN ENGLISH): Magnetic Langmuir-Blodgett films of ferritin
with different iron loadings

AUTHOR: SORIANO-PORTILLO Alejandra; CLEMENTE-LEON Miguel;
GOMEZ-GARCIA Carlos J.; CORONADO Eugenio; GALVEZ
Natividad; COLACIO Enrique; DOMINGUEZ-VERA Jose M.

CORPORATE SOURCE: Instituto de Ciencia Molecular, Universidad de Valencia, Dr. Moliner 50, 46100 Burjassot, Spain;
Dpto. Quimica Inorganica, Facultad de Ciencias,
Universidad de Granada, 18071 Granada, Spain

SOURCE: Synthetic metals, (2005), 148(1), 7-10, 18 refs.
Conference: 9 European Conference on Organized Films,
Valladolid (Spain)
ISSN: 0379-6779 CODEN: SYMEDZ

DOCUMENT TYPE: Journal; Conference

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Switzerland

LANGUAGE: English

AVAILABILITY: INIST-18315, 354000127029330020

AN 2005-0262175 PASCAL

CP Copyright .COPYRG. 2005 INIST-CNRS. All rights reserved.

AB Magnetic Langmuir-Blodgett multilayers of two ferritin molecules 1 and 2, containing, respectively, 4220 and 3062 Fe atoms have been prepared by using the adsorption properties of a 6/1 mixed monolayer of dioctadecyldimethylammonium bromide (DODABr) and methyl stearate (SME). Transfer ratios close to unity were reached giving rise to LB films with a strong red colour. Infrared and UV-vis spectroscopy indicates that ferritin molecules are incorporated within the LB films. Magnetic measurements show that the superparamagnetic properties of these molecules are preserved. Thus, a marked hysteresis loop of magnetisation is obtained for LB films of 1 and 2 with a coercive field of 3400 and 2400 G, respectively.

L17 ANSWER 2 OF 4 PASCAL COPYRIGHT 2006 INIST-CNRS. ALL RIGHTS RESERVED. on

STN

ACCESSION NUMBER: 2004-0320129 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRG. 2004 INIST-CNRS. All rights reserved.

TITLE (IN ENGLISH): Preparation and application of surface-coated superparamagnetic nanobeads in the isolation of genomic DNA

AUTHOR: XIN XIE; XU ZHANG; HUAN ZHANG; DEPU CHEN; WEIYANG FEI

CORPORATE SOURCE: State Key Laboratory of Extraction Separation Engineering, Department of Chemical Engineering, Tsinghua University, Beijing 100084, China; Faculty of Science, Sichuan Agricultural University, Sichuan 625014, China; Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139, United States; Department of Chemistry, Tsinghua University, Beijing 100084, China

SOURCE: Journal of magnetism and magnetic materials, (2004),
277(1-2), 16-23, 27 refs.

ISSN: 0304-8853 CODEN: JMMMD

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: Netherlands

LANGUAGE: English

AVAILABILITY: INIST-17230, 354000110313340020

AN 2004-0320129 PASCAL

CP Copyright .COPYRGT. 2004 INIST-CNRS. All rights reserved.

AB A novel method was developed to prepare functionalized magnetic beads, in which superparamagnetic Fe₃O₄ core was synthesized with an injection-precipitation method and then was coated with functional groups using one-step suspension polymerization. In the coating and functionalizing process, a unique coupling reagent, bis-(2-hydroxyethyl methacrylate) phosphate, was introduced so that the monomers polymerized only on the surface of the nanocrystals without forming separate nuclei. The thickness of the coating layer and the size and density of the coated nanobeads were controlled by changing the quantity of the coated monomers. The nanobeads were characterized by transmission electron microscopy, light scattering spectrometry, Fourier transformation infrared spectroscopy. X-ray fluorescence spectroscopy and the magnetic hysteresis loop determination method. The carboxyl-modified magnetic nanobeads were employed to simplify the isolation of genomic DNA from human whole blood.

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STN

ACCESSION NUMBER: 2003-0231776 PASCAL

COPYRIGHT NOTICE: Copyright .COPYRGT. 2003 American Institute of Physics. All rights reserved.

TITLE (IN ENGLISH): Hexagonal lattice of 10-nm magnetic dots

AUTHOR: MALKINSKI L.; CAMLEY R. E.; CELINSKI Z.;

WINNINGHAM T.

A.; WHIPPLE S. G.; DOUGLAS K.

CORPORATE SOURCE: University of New Orleans, AMRI, New Orleans, Louisiana 70148; Department of Physics, University of Colorado at Colorado Springs, Colorado 80919; Department of Physics, University of Central Florida, Orlando, Florida 32816; Department of Physics, University of Colorado, Boulder, Colorado 80309

SOURCE: Journal of applied physics, (2003-05-15), 93(10),
7325-7327

ISSN: 0021-8979 CODEN: JAPIAU

DOCUMENT TYPE: Journal; Conference
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-126
AN 2003-0231776 PASCAL
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AB We have grown precisely ordered and precisely located arrays of ultra-small magnetic dots. The nanofabrication process is based on the use of a protein crystal etch mask which is used to create a hexagonal lattice of holes in Si substrates. An assembly of (Fe/Pd).sub.4 dots with the average dot size of 10 nm in diameter, 6.5 nm height, and an average separation between dot centers of 22 nm was grown using molecular-beam epitaxy. The dot locations are determined by the biological mask that is used to create ordered arrays of .eqvsim.4 nm deep holes in Si. Fe/Pd multilayers (1 nm thick Fe and 0.4 nm thick Pd layers) were deposited to create dots within these holes. The dots extend .eqvsim.2.5 nm above the surface, with a thicker (1.5 nm) final layer of Pd for protection of these structures during measurements. Magneto-optical Kerr effect and magnetometry data showed that these objects are magnetic even at room temperature and are fairly soft with a coercive field of .eqvsim.40 Oe. Measurements of the hysteresis loop revealed that magnetization is in plane and that $4\pi M_{\text{eff}}$ is on the order of 15 kG. .COPYRGT. 2003 American Institute of Physics.

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STN

ACCESSION NUMBER: 2002-0054307 PASCAL
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TITLE (IN ENGLISH): Apparent magnetic energy-barrier distribution in horse-spleen ferritin: Evidence for multiple interacting magnetic entities per ferrihydrite nanoparticle
AUTHOR: ST PIERRE T. G.; GORHAM N. T.; ALLEN P. D.; COSTA KRAMER J. L.; RAO K. V.
CORPORATE SOURCE: Department of Physics, The University of Western Australia, Crawley, WA 6009, Australia; Department of Condensed Matter Physics, Royal Institute of Technology, S-100 44, Stockholm, Sweden
SOURCE: Physical review. B, Condensed matter and materials physics, (2002-01-01), 65(2), 024436-024436-7
ISSN: 1098-0121 CODEN: PRBMDO

DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: United States
LANGUAGE: English
AVAILABILITY: INIST-144 B
AN 2002-0054307 PASCAL
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AB Magnetic viscosity measurements were made on native horse-spleen ferritin in zero applied magnetic field at temperatures between 2 and 21 K. The data have been used to calculate the apparent magnetic-moment-weighted energy barrier distribution for the sample of ferritin. The distribution is composed of a log-normal distribution plus a second distribution that is well described by an exponential decay of barrier frequency with increasing barrier height. The two distributions contribute approximately equally to the overall distribution. The log-normal distribution has its peak at an energy barrier of approximately 3×10^{-21} J, while the decay constant for the second distribution has a value of approximately 2×10^{-21} J. The existence of the low-energy barrier distribution with exponentially decaying shape in conjunction with the observation of shifted field-cooled magnetic hysteresis loops is interpreted as strong evidence for the existence of multiple interacting magnetic entities within each ferritin particle.

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0 MAGNETIZATION
0 MAGNETISM
16 MAGNETIC
0 SWING

16 TIME
30 TIMES
41 TIME
 (TIME OR TIMES)
0 SWING TIME
 (SWING(W)TIME)
0 BIND
3 BOUND
L18 0 (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND (SWING
TIME) AND
 (BIND OR BOUND)

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AND (DNA or RNA or protein or antibody or antigen or analyte or peptide)

L19 0 FILE AGRICOLA
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L21 0 FILE CONFSCI
L22 0 FILE HEALSAFE
L23 0 FILE IMSDRUGCONF
L24 0 FILE LIFESCI
L25 0 FILE PASCAL

TOTAL FOR ALL FILES

L26 0 (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND (SWING
TIME) AND
(DNA OR RNA OR PROTEIN OR ANTIBODY OR ANTIGEN OR
ANALYTE OR
PEPTIDE)

=> (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND (SWING TIME)
AND biological

L27 0 FILE AGRICOLA
L28 0 FILE BIOTECHNO
L29 0 FILE CONFSCI
L30 0 FILE HEALSAFE
L31 0 FILE IMSDRUGCONF
L32 0 FILE LIFESCI
L33 0 FILE PASCAL

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L34 0 (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND (SWING
TIME) AND
BIOLOGICAL

=> (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND (hysteresis loop)
AND biological

L35 0 FILE AGRICOLA
L36 0 FILE BIOTECHNO
L37 0 FILE CONFSCI
L38 0 FILE HEALSAFE
L39 0 FILE IMSDRUGCONF
L40 0 FILE LIFESCI

L41 2 FILE PASCAL

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L42 2 (MAGNETIZATION OR MAGNETISM OR MAGNETIC) AND
(HYSTERESIS LOOP)
AND BIOLOGICAL

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ACCESSION NUMBER: 2003-0231776 PASCAL

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TITLE (IN ENGLISH): Hexagonal lattice of 10-nm magnetic dots

AUTHOR: MALKINSKI L.; CAMLEY R. E.; CELINSKI Z.;
WINNINGHAM T.

A.; WHIPPLE S. G.; DOUGLAS K.

CORPORATE SOURCE: University of New Orleans, AMRI, New Orleans,
Louisiana 70148; Department of Physics, University of
Colorado at Colorado Springs, Colorado 80919;
Department of Physics, University of Central Florida,
Orlando, Florida 32816; Department of Physics,
University of Colorado, Boulder, Colorado 80309

SOURCE: Journal of applied physics, (2003-05-15), 93(10),
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ISSN: 0021-8979 CODEN: JAPIAU

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AB We have grown precisely ordered and precisely located arrays of
ultra-small magnetic dots. The nanofabrication process is based
on the use of a protein crystal etch mask which is used to create a

hexagonal lattice of holes in Si substrates. An assembly of (Fe/Pd) sub.4 dots with the average dot size of 10 nm in diameter, 6.5 nm height, and an average separation between dot centers of 22 nm was grown using molecular-beam epitaxy. The dot locations are determined by the biological mask that is used to create ordered arrays of .eqvsim.4 nm deep holes in Si. Fe/Pd multilayers (1 nm thick Fe and 0.4 nm thick Pd layers) were deposited to create dots within these holes. The dots extend .eqvsim.2.5 nm above the surface, with a thicker (1.5 nm) final layer of Pd for protection of these structures during measurements. Magneto-optical Kerr effect and magnetometry data showed that these objects are magnetic even at room temperature and are fairly soft with a coercive field of .eqvsim.40 Oe. Measurements of the hysteresis loop revealed that magnetization is in plane and that $4\pi M_{\text{e}} \cdot f$ is on the order of 15 kG. .COPYRGT. 2003 American Institute of Physics.

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ACCESSION NUMBER: 2001-0230627 PASCAL

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TITLE (IN ENGLISH): Instrument for the measurement of hysteresis loops of magnetotactic bacteria and other systems containing submicron magnetic particles

AUTHOR: DE WAARD Hendrik; HILSINGER James; FRANKEL Richard B.

CORPORATE SOURCE: Nuclear Solid State Physics Department, University of Groningen, The Netherlands; Department of Physics, California Polytechnic State University, San Luis Obispo, California 93407

SOURCE: Review of scientific instruments, (2001-06), 72(6), 2724-2730

ISSN: 0034-6748 CODEN: RSINAK

DOCUMENT TYPE: Journal

BIBLIOGRAPHIC LEVEL: Analytic

COUNTRY: United States

LANGUAGE: English

AVAILABILITY: INIST-151

AN 2001-0230627 PASCAL

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AB An electronic control system for the measurement of hysteresis curves of microscopically observed magnetic structures such as chains of magnetosomes in magnetotactic bacteria suspended or swimming in water is

described. Using continuous magnetic fields generated by four coils for guidance or orientation of the bacteria or other magnetic structures, and pulsed magnetic fields in two additional coils for changing the degree of magnetization in small steps, hysteresis curves can be traversed. The circuits described can be constructed with readily available components. The guiding- and pulsed-field coils can be fashioned in any standard machine shop. The typical sensitivity of the system is better than 10^{-12} ergs/G, which makes a wide range of bacteria accessible to quantitative measurement of their magnetosome chains. The electronic circuits as well as the coil systems are described in detail. .COPYRGT. 2001 American Institute of Physics.